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ABSTRACT

The effect of the Mississippi Performance-Based Accreditation Model on operations in a local school district is examined. Specifically, this report describes the Tupelo, Mississippi school district's experience in producing improved pupil learning. The Mississippi accreditation paradigm is prescriptive. It is an evaluation driven system capable of accommodating diverse approaches to schooling. The Tupelo School District adopted performance-based planning, teaching/learning activity, and evaluation procedures. The state model focuses on the achievement of academic outcomes. It defines six quantifiable components of schooling: leadership, organization, instruction, staff development, climate, and outcomes. These components are compared to Tupelo's school operations. Addenda document the type of change which has occurred as a result of instituting performance-based operating procedures in the Tupelo public schools. (DWH)

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WILL THE MISSISSIPPI MODEL WORK IN A SCHOOL DISTRICT?

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The State of Mississippi has been provided a new model of school accreditation. It is a model designed to cause performance-based schools to develop in the state. Used in this sense, performance-based means that a school district can demonstrate how well it does deliver pupil learning outcomes. Each school district in the state will be accredited by rating how well it manages activity which produces quality pupil learning outcomes.

This paper addresses how the Mississippi Performance-Based Accreditation Model is likely to affect operations in a local district. Based on experience, we believe the proposed model is a practical guide to an improved public school program. This paper puts flesh on this belief by describing the Tupelo (MS) school district's way of producing better pupil learning. Observers who know the new accreditation model and the school district's operations agree that the district functions in a way which would comply with regulations fostered by the new method of accrediting schools.

The benefits of operating in the style required by the new accreditation model to our district are improved pupil performance where achievement outcomes have improved (see addenda for documentation of this and other claims); better educational equity is shown by improved achievement outcomes for the disadvantaged; there is improvement in American College Test scores; pupil attendance has improved; numbers of dropouts have decreased; pupil enrollment in more "difficult" courses has increased

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(such as advanced placement, high math and science offerings); and the disciplinary atmosphere has improved. In 1984 Tupelo High School was recognized by the United States Department of Education as an exemplary high school through the Secondary School Recognition Program.

None of the above gains can be attributed to any single activity. Since 1977 attention has been given to finding better and better ways to determine if students did learn what was taught. Finding this, energy has been spent on making corrections to improve the teaching/learning process. This process has been coordinated across the school district.

The remainder of this article relates our school activity to what the new accreditation model requires of Mississippi school districts.

The Mississippi accreditation paradigm is prescriptive. The model addresses the fact that a major effort is needed to upgrade Mississippi schools. It focuses on the ideal that youth can learn in a public school setting. Mandated is the requirement that accredited schools demonstrate that children do learn. There is no requirement that each student learns the same--desire and personal goals do influence learning--but each must master a body of material considered essential. This model attempts to account for school effectiveness in terms of what pupils learn, not time in school, age, or credit earned; therefore, the program emphasizes that schools must demonstrate that students learn desired knowledge, skills, and understandings.

The Mississippi performance-based philosophy does not represent a basic skills mentality. It is a system which has the potential to drive any schooling format. It is an evaluation driven system. It is capable

of accommodating diverse approaches to schooling: traditional, basic skills, Adler's Paideia Proposal (1984), or Sizer's ideas developed in Horace's Compromise (1984). What the system does require is a clear definition of desired learner outcomes. What is to be taught must be identified through the curriculum planning process. Once the curriculum material has been presented to the learner some measure of how much learning has occurred must be applied. Knowing whether or not teaching has resulted in learning allows teachers, principals and other administrators to make decisions which improve the quality of instruction the school offers.

The Mississippi Performance-Based Accreditation Model (subsequently referred to as the model) is a fusion of several elements found in the research literature of the past decade. The model incorporates the concept that schools should use practices which have been found to have positive impact on pupil learning. The correlates of effective schools as defined by Brookover and Schnider (1975), Cohen (1981); Edmonds (1979), and Purkey (1982) were accepted as an outline of desirable practice. (These are described in detail later in the article.) This descriptive outline was given substance by adding findings by other researchers (Doyle, 1983; Bloom 1976) which supported the effective schools correlates (Saterfiel and Woodruff, 1984). The concept of discrepancy evaluation as described by Mel Provus (1971) was incorporated as a method of sampling program activity for evaluation data needed to make school improvements. The ingredients outlined above were assembled into a decision-making management system which suggests by whom and at what points decisions need to be made and presents possibilities as to types of data which are necessary to make these decisions.

The model has a history which began in 1975. That year the Mississippi legislature expressed its concern about the quality of student learning in Mississippi school districts by requiring statewide testing and publishing of scores of all students in grades 4, 6, and 8. (In 1976 our district leaders did not like the comparisons seen. Our process of upgrading the quality of our teaching/learning activity began.) In 1977 the Mississippi State Department of Education encouraged schools to measure student learning in relation to teaching by using Mel Provus' program evaluation model. By 1979 the Provus model had been modified, written into state accreditation regulations, given a title (Accountability/Instruction Model or AIM), and use required by all districts. In 1982 these AIM procedures were combined with the effective school concepts, written into school law, producing the present model.[1]

As a result of work since 1976 (compatable with state effort) the Tupelo School District adopted performance-based planning, teaching/learning activity, and evaluation procedures which have these characteristics:

(1) Choosing a mission; school district planning involved (involves) the community with school staff members in choosing long term academic objectives for students (within and across all academic disciplines) in order to focus on what students are to learn;

(2) A choice of learner goals; teachers and administrators (a) select specific long and short term goals which can achieve the schools' mission; (b) select ways to measure these goals by unambiguous indicators of pupil performance, and (c) select

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[1]For an excellent short history of this process see Charles Harrison and Bob Cage. Accountability in education: a task unfinished. Spectrum 1985, 3(1), pp. 13-17.

some standard method of collecting data (academic learning outcomes) on these measurements of desired performance;

(3) A choice of essential structure; as a result of the above planning a framework of building block (essential/threshold) skills necessary for students to achieve both lower and higher levels of learning activity in every subject has been put in place (for example, essential skills for the mathematics continuum has eight or nine major objectives each year; the skills to be developed in written expression are specified in each subject);

(4) A teacher choice of learning activity; effective teacher/pupil interaction was defined by turning to the research literature with teachers trained in these skills, but free to make their own choice of materials and presentation style:

(5) A monitoring of program quality; planning, procedural activity, and instructional time use are monitored by systematic cyclic process to assure that teaching is of the desired quality;

(6) A monitoring of program success; summary and evaluation of various types of output from the classroom to determine if the desired learning is occurring; the use of computers helps teachers and administrators with this process;

(7) A system of feedback/program renewal; data obtained from measurement of pupil learning is used as feedback to improve procedures (teaching, testing, curriculum design, etc.) which do not produce the desired results; the summarizing concerns of local performance-based education being: Is what was

intended to occur happening as planned? Is this activity a proper one for learners?

What relation do the procedures listed above have to the model? The model, which the Mississippi Education Reform Act of 1982 required to be developed, recognizes that pupils and teachers do not interact in isolation. It was designed to lead each Mississippi school district into developing teaching/learning/management procedures similar to the seven steps described above.

As we see the model, it requires energy to be focused across a school district on the achievement of academic outcomes. To facilitate developing this focus, the model fosters the development of a "sense of the whole" (Sizer 1984) by interlocking of six components of schooling--leadership, organization, instruction, staff development, climate, and outcomes. These components are defined in enough detail in the model to give direction to a school district as to how each element contributes to improve pupil learning output. Following the model as a guide a local district should be able to decide which actions to take to develop and manage an academically effective school. We have enough performance-based experience to believe that the model procedures (as a paradigm) can help school staff members determine appropriate academic tasks, who is responsible for a given task within the school system hierarchy (from school board to service personnel), to assign responsibility as to who should monitor what is happening academically, and to show how to measure the degree to which pupil learning is achieved. In a nutshell, the Mississippi version of performance-based instructional activity is very

likely to produce a goal oriented school district which is closely coupled in a number of elements and loosely coupled in others (for an excellent discussion of of the concept of coupling in organizations see Weick, 1976; March 1958, 1976) with decision making driven by information gained by measuring student progress in achieving locally chosen academic requirements.

The Mississippi performance-based model does not require a particular style of instruction. Following the model will not change our choice to use fairly typical schooling procedures. The art of the classroom teacher is still the coin of the realm. For districts who might follow the model, our experience shows that performance-based process will require adjustments in teaching (better overall classroom skills create time needed for reteaching) and product evaluation (deciding on quality of results did require specialized evaluation practice). The management aspects do mean deciding how to monitor and collect data and learning how this information could best be used to make decisions. Model use will mean agonizing over local definitions of success and learning if desired goals are achieved by these definitions.

The operational style developed in the Tupelo school district is useful to manage our performance-based procedures. Our style as outlined below, however, will typify schools following the Mississippi Model.

The curriculum in grades K-12 is very carefully planned in terms of knowledge, skills, and understandings which pupils must master. There are threshold levels for all students to achieve in order to gain

promotion. Many of these thresholds require performance levels identified as higher level thinking skills. A criterion referenced testing program accompanies each major curriculum objective with measurement carefully designed to reveal whether or not individuals and/or groups of students need to be retaught.

The school day is from 8:00 A. M. to 3:00 P. M. for grades 1-9 (Kindergarten half day) and 8:00 A. M. to 3:20 P. M. for grades 10-12. The academic school year is 178 days. Class loads are kept low (below 24 in elementary grades) and each teacher in the primary grades has an assistant teacher (para-professional who shares the teaching load under direction of the teacher).

A staff development program trains teachers and administrators in effective teaching and pupil evaluation techniques. A critical part of this activity involves teacher evaluation. Teacher evaluation and staff development are integrated. Each is designed to help teachers improve classroom instruction through feedback and corrective procedures. School principals are trained to carefully monitor teacher lesson plans, make frequent visits to each classroom to determine if delivery is effective, and to use techniques necessary to remedy flaws and/or reenforce behavior which causes better pupil learning.

All curriculum design is done locally by teacher and administrator committees who work actively with parents, lay persons, and members of college staffs in the process to establish a sound curriculum which includes a wide variety of skills, knowledge and understandings to master. The curriculum is published with objectives clearly stated. Teachers

are aware of what students have learned in previous instruction and how what they are asked to teach fits into the overall school district objectives. Once material has been taught, individual students and class groups are tested for mastery of desired knowledge, skills, and understanding and retaught where necessary. Promotion is tied to achievement of chosen objectives not to time in school, credit earned or pupil age.

Parent advisory committees work actively in the areas of discipline, curriculum, and school facilities planning. Disciplinary practices are well-organized and rules and regulations are disseminated widely. Disciplinary rules are rigidly enforced only after fair due process hearings.

Budgetary planning is tied to instructional needs. Long range planning is directed to locating sources of funds to put in practice both old and newly developing curriculum ideas. An active non-profit foundation raises funds to support new program development.

School district policy makers are directly involved in planning and development work with local industrialists, business people, classroom teachers, parents, and other segments of the community.

How the six areas of the performance-based accreditation relate to local practice is illustrated in the following sections by comparing the Mississippi Model's six quantifiable components against our local school operations:

I. Leadership--Interactive behavior is required. In fact, the model specificies that school district leadership will be multilevel and multifaceted. Planning activity is to revolve about a Five Year Plan which guides the school district's operation. Developing the plan

requires a spectrum of community leaders, the school board, and staff to be interactive. This process results in board policy being as much influenced by teacher input as teaching activity will be by policy guidelines. There are leadership roles for each level of the district hierarchy. Our school board samples staff and public opinion while developing policies from the long range plan which (1) define the quality of learner outcomes for the school district and (2) subjugates all other district activity to instructional needs. The superintendent carries out these policies by developing administrative procedures which are correlates of board policy. School principals' operating procedures are, in turn, local school developed interpretations of board policies and the superintendent's administrative procedures. The activities of classroom teachers and their support staff are correlates of the local school administrative guidelines.

II. Organization--Closely coupled administrative/instructional behavior relationship is a model emphasis. A difficult task assigned our school district personnel was in the determination of the purpose for organizational structures within the school district. (Typical question: What is the purpose of teacher evaluation? Answer: Evaluation must improve pupil learning. Task: Develop an evaluation system which improves teaching/learning; involve all staff in the effort). One practice which has developed in the Tupelo School organization is that budgetary practices, planning and decision making, personnel practices, development of the curriculum instructional support programs and services, all focus on instruction through an educational policy statement. The

organization structure is such that the skills of ordinary people can be utilized effectively to produce good pupil learning. The critical determination for our school personnel has been and is: What is the best way to organize our limited resources to gain the desired learner achievement?

III. Instruction--Special attention is required by the model that personnel know what is to be taught locally and how success is to be measured. The most noticable difference in our local educational program from past practice has been in coupling curriculum material to a management system. All phases of instructional activity in the school district are based upon a carefully thought out, and locally appropriate, school curriculum. Curriculum development did, and does, require many hours of staff time. Teachers, lay people, and school administrators must agree upon knowledge, skills, and understandings to be achieved by students. Scheduling and coordinating this planning activity becomes a substantial undertaking. This has been underway since 1977 and appears to be a continuous process. The development of this curriculum requires classroom teachers to state long term objectives for learners (for an apt description of this process see Ryan, 1983), determine what short term activities contribute to these objectives, and to develop measures which accurately assess how well objectives are being achieved. The daily lesson plans are entirely the responsibility of the teacher. A difficult part of the process has been to determine which outcome data is most useful as a management tool.

As can be seen, a basic skills component has developed in this plan. It also incorporates into practice the belief that students who

are not handicapped will attain mastery of threshold/minimal learner objectives. We also presume that each student will master a broad range of knowledge, skills, and understandings.

IV. Staff Development--The delivery of a well balanced program of teaching/learning is a model emphasis. This, we found, requires special professional skills on the part of teachers and some rethinking of classroom time use. We deem it desirable to do staff retraining at all levels of teacher ability in order to get desired teaching practice. Although teachers still teach using their own style, and principals continue their operation much as usual (except to spend much more time visiting teachers and interacting about the teaching/learning process) performance-based schooling does shift attention from process to results attained. This shift does require a high degree of staff interaction in the development, delivery, evaluation, and management phases of the school instructional program; thus, closely coupling a school operation became a logical method of operation in this model.

The school district has developed a sequence of events to establish good teaching as the highest priority for the district. To emphasize this there are training activities for all in effective time use; adopted and published criteria for evaluating teachers; research based procedures used to determine if teachers satisfy the criteria; all teachers provided with evaluation and training, with time to improve their work through peer group activity; principals trained to appraise teachers progress; principals required to expend the time needed to perform instructional supervisory responsibilities; principals responsible for identifying the incompetent teachers; inadequate teachers--who

seem slow or reluctant to improve--provided an opportunity for a fair hearing prior to any decision on dismissal.

We found interactive/cooperative behavior to achieve a common goal to be a skill not well developed in our secondary personnel (Firestone and Wilson, 1983). Such skills can be developed. Several examples where we find training is needed to reinforce necessary interaction are:

A. A school principal must be able to determine what the teaching staff is attempting to accomplish, i.e., the principal should know curriculum goals, teacher's daily lesson plans, be in the classroom on a fairly frequent basis, and be able to determine if chosen goals are being achieved (Prince, 1984);

B. Classroom teachers must know what others teaching the same discipline are accomplishing and must be able to integrate their work horizontally and vertically, in addition teachers must integrate activity with other disciplines for the benefit of an individual student moving through the program (Prince, 1983);

C. Librarians must know the instructional program and adjust library activities to assist teachers deliver this program;

D. Counselors must be able to help develop special programs for students, or adjust student's instructional programs where specific weaknesses are found;

E. Teachers and counselors need skills useful to advise parents that there are learning deficiencies in specific areas (reporting results) which need correction and must be encouraged to assist students overcome deficits;

F. Teachers must be able to determine where training in higher order thinking skills can be added to the instructional program, particularly in interdisciplinary activity, and must be able to plan instructional time and activity to see that such activity is a part of day-to-day classroom experience for students of all abilities.

V. Climate--The model encourages an atmosphere which will give the classroom teacher the opportunity to teach without interruption. We have specifically required decreased movement in the halls of the school during teaching time, limiting public address interruptions to the beginning or end of the school day period, limiting interruption of the school day by athletic or other activities and the development of procedures related to assertive discipline. Students, teachers, and parents are involved in development of school district disciplinary procedures. Records are kept of the nature and types of disciplinary offenses. This information is used as feedback to locate and correct persistent problems, some of which, unfortunately, are found to be staff related problems. Other areas given for attention in the climate area are high expectation for student performance, high expectations for staff performance, a sense of community, and rewards and recognition for successful performance on the part of both students and staff members.

VI. Achievement--Fair and accurate local testing programs are required. As simple as this may sound, implementing this portion of the model requires substantial retraining of staff members. Classroom teachers must develop their own accurate measures of student performance. Getting the desired accuracy of measurement proves difficult in practice.

These procedures are essential: Classroom teachers within the same discipline agree upon measures of student proficiency; teachers' tests utilize enough of these measures to indicate degrees of pupil proficiency in the classroom; individual and class reteaching is done where necessary; summaries of several sources of these data are used in decision making--analysis of major teacher tests, data from achievement tests, information from various types of non-test data.

The issue of equity in education is one which deserves consideration. We find the rising tide of improved education program is lifting all of our boats, but due to the variance in personal goals/intensity some still float higher in the water than others. Performance-based education still produces differential learning rates, despite more time to weaker students. In practice we do not find that Bloom's hypothesis (1976, p. 208) that Mastery Learning could close the gap between slower and brighter students a practical goal. Though performance-based instruction does produce better results for lower ability students than we have ever enjoyed, we are convinced that differential results are unavoidable. Pete Instein (1983) and H. Alan Cohen (1984) also note this effect. Cohen and others, notably Arlin (1984), have independently concluded that application of performance-based schooling (in the style of Ben Bloom's mastery learning concepts) does not close the gap between bright and less able students as Bloom and others hypothesized. Cohen's findings were that students of varying ability continue to profit differentially under good performance-based instruction; in fact, he finds no effect showing, ". . . the learning rate of slow learners will approach that of

fast learners . . ." under such a mastery/performance-based instructional format. Rather than the gap being closed, the entire continuum of student performance was moved upward, Cohen found. Our district has similar findings. This is considered a positive effect, producing better learning for students of all ability. Our concern for the weakest and least motivated student is that they exceed our challenging minimal standards. If they do so they will receive an excellent education. This seems to be the equity issue with which we are able to come to terms.

CONCLUSIONS CONCERNING THE MISSISSIPPI MODEL AT WORK IN A SCHOOL DISTRICT

In our district our classroom teachers still conduct classroom work in traditional procedures. The change in local practice is in measurement of student performance against our chosen standards, then making adjustments where necessary.

We find the management process difficult to initiate. It requires more careful organization and planning than our past practice. Our school staffs did require training in how to work cooperatively. Valid testing skills were difficult to develop.

One serious problem to overcome with the Mississippi Model for would-be practicioners of performance-based education is to overcome the belief that performance-based schools are primarily directed to student mastery of low level skills. Performance-based education requires that students demonstrate mastery of whatever skills are taught. Determining the desirable levels of these skills is the staff's professional challenge.

Over the state of Mississippi we are finding the most difficult part of implementing a good performance-based instructional program is

in coordinating each of the six areas of measurable performance outlined earlier in the paper. In the past, as a general practice, there apparently has been little coordination between staff members to coordinate instructional activity. Coordination is difficult to achieve in practice as practitioners often fail to comprehend the interrelated nature of good instruction and tend to deal with changes in schooling in piecemeal fashion. Improving the performance of the school system as a whole, simultaneously, is the key to the Mississippi Performance-based Accreditation Model's successful operation.

As more case studies on individual districts are completed they will illustrate the extent to which the Mississippi Accreditation Model can help school officials put in place a management system which significantly impacts on educational outcomes.

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Purpose of Addenda

The purpose of these addenda is to document the type of change which has occurred as a result of instituting performance-based operating procedures in the Tupelo Public Schools.

ADDENDUM I: ACHIEVEMENT TEST SCORES HAVE INCREASED

Table 1 shows changes in Tupelo Public Schools mean student achievement test scores over five years of development of the performance-based school program. Scores on the California Achievement Test (CAT/77) have improved. This can be observed by following the progress of a single group of students through five years. Beginning with the group of students in grade two in the spring of 19[illegible] (and moving down the chart diagonally as indicated) one can observe that the average CAT/77 achievement score increases each year as the students move from grade two through grade six. During this time there has been no significant change in the mean derived I.Q. Score as measured by the Short Form Test of Academic Aptitude. As the school district has been able to maintain, or increase, achievement performance of any group of students over time we believe that the high percentage of students scoring above the national average in the lower grades in the 1984 testing will continue apace throughout the academic careers of each group of students.

Table 1

MEAN SCORES/I. Q. BY CLASS SPRING, 1980 to SPRING 1984

California Achievement Test/Short Form Test of Academic Aptitude

Grade	Spring 80 Mean Ach.	Spring 80 Mean I.Q.	Spring 81 Mean Ach.	Spring 81 Mean I.Q.	Spring 82 Mean Ach.	Spring 82 Mean I.Q.	Spring 83 Mean Ach.	Spring 83 Mean I.Q.	Spring 84 Mean Ach.	Spring 84 Mean I.Q.
1	68	102.0	77	101.0	86	103.8	[illegible]	103.1	87	103.9
2	73	104.6	76	104.5	78	105.1	82	107.8	83	106.0
3	73	107.1	76	106.9	75	104.8	81	106.6	83	107.7
4	71	105.0	75	105.5	76	106.0	74	104.5	80	105.8
5	73	105.7	74	104.9	76	104.4	79	104.7	77	103.4
6	76	105.0	77	106.0	78	106.0	74	105.4	80	106.4
7	65	99.9	69	102.0	72	103.2	75	102.8	72	102.4
8	63	102.0	66	102.5	68	104.6	73	104.1	72	103.9
9	61	101.4	63	103.6	64	103.8	68	103.2	72	105.0

ADDENDUM II: EDUCATIONAL EQUITY--A RISING TIDE LIFTS ALL BOATS.

Table 2 illustrates that year to year increases in achievement test scores shown in Table 1 reflect improved academic performance at all ability levels. In Grade 2 in the spring of 1984 86% of all second graders scored at the national 51 percentile or above. Thirty-seven and sixth-tenths (37.6%) of these children are qualified for the free meal program under USDA regulations.

Table 2

Changes in Percentages of Tupelo Students Scoring in Each National Quartile: California Achievement Test; Grades One through Nine; 1979-80 to 1983-84 School Years

Grade	National Quartile	April '80	April '81	April '82	April '83	April '84
1	76-99	40.0%	50.2	64.7	60.0	63.3
	51-75	32.6	25.8	20.8	24.8	24.6
	26-50	11.3	10.3	8.1	7.4	8.1
	1-25	15.9	13.7	6.5	7.8	4.0
2	76-99	44.1	48.1	53.9	57.7	61.2
	51-75	30.5	26.7	24.7	23.7	24.3
	26-50	16.8	19.2	16.4	12.1	9.7
	1-25	8.6	6.0	4.9	6.5	2.6
3	76-99	46.1	51.9	47.4	59.9	63.8
	51-75	24.3	22.3	21.8	20.8	21.7
	26-50	19.3	16.0	23.4	12.6	9.5
	1-25	10.0	9.9	7.4	6.7	5.0
4	76-99	43.2	47.9	51.0	42.7	51.9
	51-75	26.4	25.2	24.5	25.8	24.7
	26-50	23.1	15.5	15.0	24.6	17.2
	1-25	7.2	11.4	9.5	6.9	6.2
5	76-99	47.5	46.2	48.6	55.8	48.2
	51-75	24.5	26.7	21.7	20.7	24.9
	26-50	19.8	18.6	21.9	16.5	21.1
	1-25	8.2	8.5	7.8	6.9	5.8
6	76-99	53.5	50.5	52.6	46.4	53.2
	51-75	23.9	25.9	26.2	25.1	25.5
	26-50	15.1	15.0	16.1	20.8	15.3
	1-25	7.5	8.6	5.0	7.7	6.0
7	76-99	36.1	43.5	51.9	46.7	42.3
	51-75	26.4	29.5	25.0	27.8	30.9
	26-50	21.2	18.5	15.4	18.4	21.9
	1-25	16.4	8.1	7.7	7.1	4.9
8	76-99	37.0	40.8	42.5	45.3	44.1
	51-75	28.2	31.1	28.1	32.2	30.7
	26-50	22.5	17.9	21.6	14.2	17.1
	1-25	12.3	10.3	7.7	8.3	8.1
9	76-99	33.2	34.7	37.3	39.8	47.6
	51-75	29.2	27.6	30.8	30.6	24.7
	26-50	25.8	26.1	18.3	19.1	21.7
	1-25	11.8	11.7	13.6	10.5	6.0

ADDENDUM III: EDUCATIONAL EQUITY--ACT SCORES IMPROVE

Discussion: We maintain a data bank which contains the ACT scores of each graduate of Tupelo High School. Approximately 75% of our graduates take this test annually. Table 3 shows the mean score of several subsets of this student population, as well as the comparable national sample mean where available (Normative Data obtained from The High School Profile Report: Normative Data American College Testing Program, 2201 N. Dodge St., Iowa City, Iowa).

Table 3

American College Test (ACT) Composite Scores As Represented by Graduating Seniors: 1978 to 1984

	Class 1978 Mean	Class 1979 Mean	Class 1980 Mean	Class 1981 Mean	Class 1982 Mean	Class 1983 Mean	Class 1984 Mean
Total Class	17.8	17.4	17.9	18.3	18.3	17.8	18.6
Female Students	17.3	16.9	17.1	18.0	17.9	17.5	18.0
White Students	18.2	18.0	18.7	19.0	18.9	18.5	19.2
Black Students	11.6	12.3	12.7	12.6	13.1	11.9	14.1
10% Natl Sample	18.2	18.4	18.4	18.5	18.4	18.3	18.5
10% Natl Sample F	17.6	17.8	17.7	17.8	17.8	17.6	17.9
10% Natl Sample M	19.1	19.2	19.2	19.3	19.2	19.1	19.3

A linear regression line was developed showing a seven year trend for each segment of the population in Table 3. These lines are displayed in Chart 1 in terms of net gain in ACT Score for the time period 1978-1984. In every instance the local population gains exceeded those of the national sample.

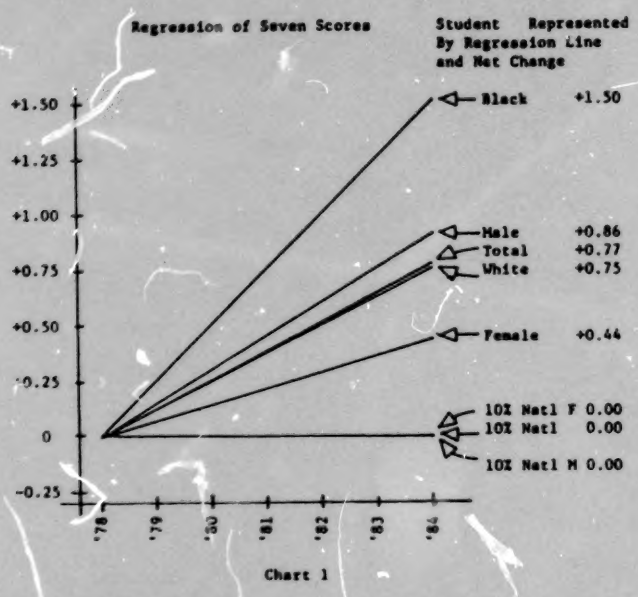

Chart 1

Relative Change in ACT Scores: 1978-1984

Conclusion: A rising tide lifts all boats. Equity is served by performance-based education.

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ADDENDUM IV: AVERAGE DAILY ATTENDANCE AS A PERCENT OF ENROLLMENT HAS INCREASED ANNUALLY 1979-80 to 1983-84

Yearly Average Daily Attendance as a percent of first month enrollment has grown annually as shown by a linear regression line.

Year	End of 1st Month Enrollment	Average Daily Attendance for year	ADA as a percent of first month enrollment
1979-80	5161	4873.20	94.43
1980-81	5023	4783.63	95.23
1981-82	4986	4703.81	94.34
1982-83	4980	4740.37	95.07
1983-84	5032	4817.18	95.73

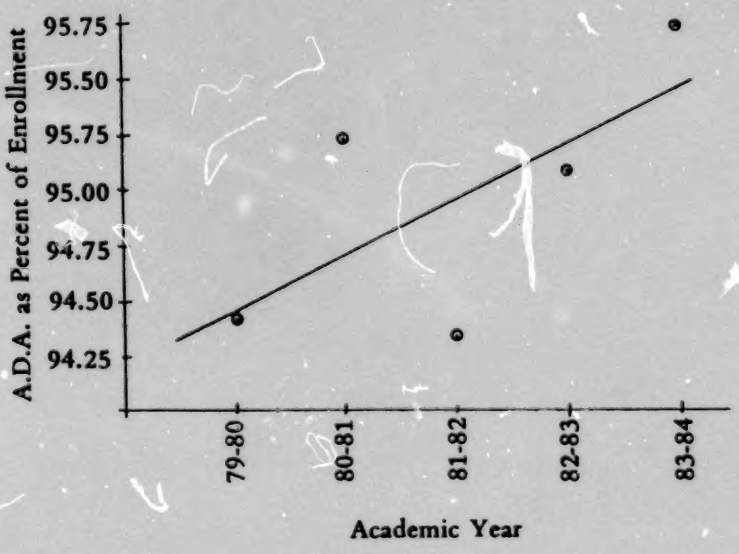

Chart 2

Annual Increase in A.D.A. as Shown by Regression Line

ADDENDUM V: THE DROPOUT RATE IS DECREASING

Mississippi students may drop out of school at age 14. Elementary dropouts are negligible (death or serious illness usually account for those who do not continue to end of school year). Secondary dropouts, as a percent of secondary enrollment, appear to be declining.

	7-12 Enrollment	7-12 Dropouts	Dropouts as percent of enrollment
1979-80	2486	96	3.86%
1980-81	2399	97	4.04%
1981-82	2396	66	2.79%
1982-83	2363	83	3.51%
1983-84	2308	77	3.34%

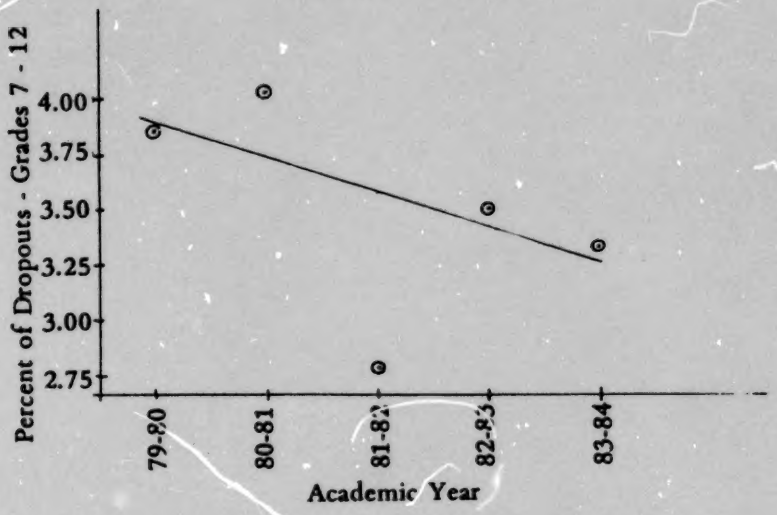

Chart 3

Annual Decrease in Percentage of Dropouts in Grades 7-12 Enrollment

ADDENDUM VI: PUPIL ENROLLMENT IN MORE DIFFICULT COURSES HAS INCREASED

Graduation requirements have not changed (4 English, 2 Math, 2 Science, 2 Social Studies, 8 Elective), but there is a voluntary increase in the ratio of more difficult courses taken to total student body enrollment.

Table 4

Advanced Courses against First Month Enrollment in Grades 10-12 in Tupelo Public Schools

Advanced Subject Title	Year 80-81	Year 81-82	Year 82-83	Year 83-84	Year 84-85
AP English	18	12	16	33	71
AP American History	18	33	18	23	16
AP European History	-	19	10	31	36
AP Calculus	-	-	-	-	13
AP Chemistry	6	37	27	15	23
Spanish II, III, IV	63	76	81	111	84
French II, III, IV	61	51	64	49	63
Algebra II	259	215	233	302	310
Adv. Algebra	127	96	79	103	131
Math Analysis	64	67	50	86	111
Trigonometry	125	103	115	90	120
Pre Calculus	88	65	69	51	57
Biology II	-	-	-	367	345
Chemistry	128	163	114	174	211
Physics	50	54	39	33	63
Total Advanced Courses	1007	991	915	1498	1660
First Month Enrollment	1190	1129	1113	1102	1150
Ratio of Higher Level Academic Courses to First Month Enrollment	.846	.878	.822	1.359	1.443

ADDENDUM VII: AGGREGATE ACHIEVEMENT TEST SCORES GROW STRONGER IN RELATION TO AGGREGATE ABILITY TEST SCORES.

Discussion: Over the years we came to accept that achievement test scores and ability test scores represented a tautology. We have evidence that these scores may not be redundant when considered in the aggregate. Achievement scores have improved at a faster rate than ability scores over the past five years.

Each year the Tupelo School district administers the appropriate form of the 1977 edition of the California Achievement Test (CTB/McGraw Hill) and the appropirate form of the Short Form Test of Academic Aptitude (CBT/McGraw Hill) to every student in grades one through nine. We have five years of test data collected during a period in which the performance-based program has been developing in the school district. Each year the SFTAA is administered in the first week in April, the CAT-77 in the second week in April. Each of these tests yield a national percentile mean score for the entire grade group. These grade group mean scores are compared year to year by converting each to Normal Curve Equivalents (NCE) which have the advantage of percentile ranks but have the additional advantage of being based on an equal interval scale (the difference between two successive scores on the scale is the same over all parts of the scale).

A comparison of percentile scores and NCE scores is shown in Exhibit 1.

Exhibit 1

CORRESPONDENCE BETWEEN PERCENTILE RANKS AND NEAREST WHOLE NCE

%ILE RANK	NCE	%ILE RANK	NCE	%ILE RANK	NCE
99	99	66	59	33	41
98	93	65	58	32	40
97	90	64	58	31	40
96	87	63	57	30	39
95	85	62	56	29	38
94	83	61	56	28	38
93	81	60	55	27	37
92	80	59	55	26	36
91	78	58	54	25	36
90	77	57	54	24	35
89	76	56	53	23	34
88	75	55	53	22	34
87	74	54	52	21	33
86	73	53	52	20	32
85	72	52	51	19	32
84	71	51	51	18	31
83	70	50	50	17	30
82	69	49	49	16	29
81	68	48	49	15	28
80	68	47	48	14	27
79	67	46	48	13	26
78	66	45	47	12	25
77	66	44	47	11	24
76	65	43	46	10	23
75	64	42	46	9	22
74	64	41	45	8	20
73	63	40	45	7	19
72	62	39	44	6	17
71	62	38	44	5	15
70	61	37	43	4	13
69	60	36	42	3	10
68	60	35	42	2	7
67	59	34	41	1	1

Source of Exhibit: California Achievement Test Norms Tables: Scale Score to NCE, All Levels. CTB/McGraw Hill, Del Monte Research Park, Monterey, California.

ADDENDUM VII: continued

Table 5 shows changes in NCE scores on the SFTAA and CAT/77 over a five year period; grades are in rows. years in columns. In each block the student n is in the number upper right, the upper score represents the "ability" score or the NCE of the derived ability percentile score from the SFTAA; the lower score in a block represents the CAT/77 NCE score; the number to the right in each block is the mathematical difference between the ability and achievement NCE shown only as a reference to allow easier comparison of the difference in magnitude of each. These data are compiled in graphic form in Chart 4.

Table 5

Comparison of SNIQ Percentile with SNCE Percentile

GRADE	1979-80	1980-81	1981-82	1982-83	1983-84
1	n-423 53 7 60	n-437 51 14 65	n-431 55 17 72	n-461 54 17 71	n-460 55 19 74
2	n-424 56 7 63	n-406 56 9 65	n-384 56 10 66	n-415 60 9 69	n-424 58 12 70
3	n-419 59 4 63	n-427 59 6 65	n-367 56 8 64	n-391 59 10 69	n-424 60 10 70
4	n-444 56 6 62	n-423 57 7 64	n-421 57 8 65	n-420 56 7 63	n-389 57 11 68
5	n-406 58 5 63	n-424 56 8 64	n-397 56 9 65	n-405 56 11 67	n-419 54 12 66
6	n-408 56 9 65	n-411 57 9 66	n-416 57 9 66	n-414 56 8 64	n-422 56 11 67
7	n-419 50 8 58	n-407 53 8 61	n-406 54 8 62	n-410 54 10 64	n-394 53 10 63
8	n-359 53 4 57	n-388 53 6 59	n-402 56 4 60	n-376 55 8 63	n-400 55 8 63
9	n-404 51 5 56	n-327 54 3 57	n-380 54 4 58	n-394 54 6 60	n-371 56 8 62
Grand mean of each column	54.7 5.4 60.1	55.1 8.0 63.1	55.7 8.6 64.3	56.0 9.7 65.7	56.0 11.2 67.2

IQ - NCE
DIF
ACHIEVEMENT-NCE

ADDENDUM VII: continued

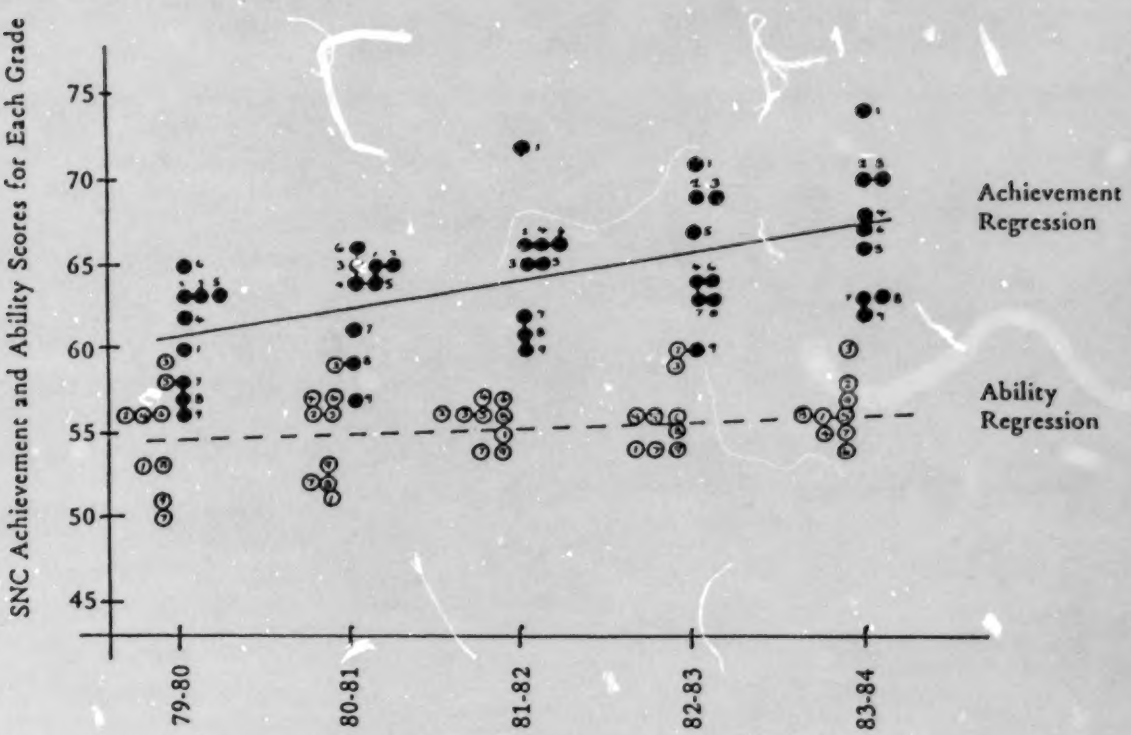

Chart 4

Relative Changes in Aggregate Scores: Achievement vs. Ability
Short form Test of Academic Ability vs. 1977 Edition of the
California Achievement Test
Grades One Through Nine 1979-80 to 1983-84 Academic Years

Discussion:

1. SFTAA NCE's seem relatively stable. In Table 5 there is no consistent pattern of change on rows (same grade different class), column (same year different class group), and diagonals (relatively same group of students from one year to the next). The change in the SFTAA grand mean NCE for 1979-80 to 1983-84 is not significant at the .01 level as is reflected in the Ability Regression Line in Chart 4.

2. CAT/77 scores tend to increase from year to year (rows) in Table 5 regardless of the SFTAA NCE variations, i.e., each succeeding grade grows stronger in achievement each year. The change in the grand mean NCE score on the CAT/77 from 1979-80 to 1983-84 is significant at the .01 level as is reflected in the Achievement Regression Line in Chart 1.

3. As is shown in Table 5 once a group of students has established a pattern of achievement they tend to keep that pattern year by year (diagonals). We are now convinced we can hold the high levels of achievement scores shown in Table 5 in the lower grades in the recent past into the higher grades

Conclusion: Year by year CAT/77 test scores are improving significantly while SFTAA ability test scores changes are not significant.